

We claim:

1. A process for preparing a compound having a nonaromatic C-C double or triple bond (compound A) from another compound or a mixture of other compounds having a nonaromatic C-C double or triple bond (compound B), which comprises bringing the compound (B) into contact with a heterogeneous catalyst comprising carbides or oxycarbides of a transition element at from 50 to 500°C.
2. A process as claimed in claim 1, wherein the compound (B) is selected from the group consisting of C₂-C₁₂-olefins, substituted C₂-C₁₂-olefins and mixtures of the abovementioned compounds.
3. A process as claimed in any of the preceding claims, wherein the heterogeneous catalyst is selected from the group consisting of molybdenum carbide, molybdenum oxycarbide, tungsten carbide, tungsten oxycarbide and mixtures of the abovementioned compounds.
4. A process as claimed in any of the preceding claims, wherein the heterogeneous catalyst used is a supported catalyst in which a carbide or oxycarbide of a transition element forms the active component (activator A) which has been applied to a customary support (support S).
5. A process as claimed in claim 4, wherein the proportion of activator (A) in the supported catalyst is from 0.1 to 30% by weight.
6. A process as claimed in claim 4 or 5, wherein the heterogeneous catalyst used is a supported catalyst whose support (S) is selected from the group consisting of Al₂O₃, aluminosilicates, Ga₂O₃, SiO₂, GeO₂, TiO₂, ZrO₂, SnO₂ and mixtures of the abovementioned compounds.
7. A process as claimed in any of claims 4 to 6, wherein the supported catalyst is prepared by
 - a.1) impregnating the support (S) with a solution of a compound of a transition element (step a.1),
 - b.1) subsequently drying and then calcining the support (S) which has been impregnated in step a.1) (step b.1),

- c.1) heating the support (S) from step b.1 at from 550 to 1 000°C in an atmosphere comprising a hydrocarbon compound and hydrogen (step c.1)
- 5 8. A process as claimed in any of claims 4 to 7, wherein the heterogeneous catalyst used is a supported catalyst which is obtainable by
- a.2) applying a carbide or oxycarbide of a transition element to a customary support so as to produce a catalyst precursor (a.2) (step a.2),
- 10 b.2) bringing the catalyst precursor (a.2) into contact with a hydrocarbon compound at from -20 to 550°C (step b.2) and
- c.2) heating the catalyst precursor from step (b.2) at from 410 to 850°C in an inert gas atmosphere (step c.2).
- 15 9. A process as claimed in any of claims 4 to 8, wherein a hydrocarbon compound selected from the group consisting of C₁-C₂₀-alkanes, -cycloalkanes, -olefins, -cycloolefins, -alkynes, -cycloalkynes, aromatics and mixtures of the abovementioned compounds is used in step (b.2).
- 20 10. A process as claimed in any of claims 4 to 9, wherein an inert gas selected from the group consisting of nitrogen, carbon dioxide and noble gases and mixtures thereof is used in step c.2).